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(54) **BLADE MECHANISM FOR A PLANT MATERIAL TRIMMING DEVICE**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

1,836,386 A 12/1931 Nichols et al.
1,945,582 A * 2/1934 White A01D 75/08 451/423
(Continued)

FOREIGN PATENT DOCUMENTS

CA 2740149 11/2012
CA 2815592 11/2014
CA 2818405 11/2014

OTHER PUBLICATIONS

Keirton Manufacturing Inc., Twister CT110 Instruction Manual, 2010, Canada.
(Continued)

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(57) **ABSTRACT**

A plant material trimming device includes two end walls supporting a rotatable perforated tumbler, a rotatable reel with helical blades, and a blade mechanism pivotably connected to the end walls of the device. The blade mechanism includes: (i) a blade bar configured to cut plant material in cooperation with the helical blades when the device is in operation; (ii) a first arm operatively associated with the blade bar; and (iii) a second arm pivotably connected to the first arm such that the second arm can pivot downward when the blade mechanism is unlocked. A tightening block may be threadedly connected to the second arm and connectable to one of the two end walls. The tightening block may be configured for adjusting the pitch of the blade bar relative to the helical blades when the blade mechanism is locked to the end walls.

20 Claims, 9 Drawing Sheets